approach

JULY 1981 THE NAVAL AVIATION SAFETY REVIEW

THE ALTERNATIVE

By LT Dale Smith

Safety is often a tiresome, intangible business. Safety instructions, reams of paperwork and messages, picky procedures, and time consuming checks and inspections burden us daily and seem to offer little reward. The incessant requirement to do everything "by the book" often frustrates our natural desire for expediency.

Taken as a whole, our "educational safety information" boils down to one universal warning – "do it exactly right, every time, or you may be killed or seriously injured." The "killed" part sticks in our minds. For many of us, safety becomes an all-or-nothing game – we're either alright or we're dead.

Since we don't really know anything specific about being dead, it remains an obscure consequence. Because of the inevitability of death – it's simply a matter of time, you know – it becomes easy to adopt a rather fatalistic attitude toward our safety. But what about the possibility of serious injury?

Injuries are far more common than fatalities. They are also easy to visualize. We live with injuries; they normally don't offer the ultimate escape of death. The reality of living with, and in spite of, serious injury is the subject of this month's lead article, "No one said it was going to be easy." Read the article and then take another look at your attitudes about all the work expended in the pursuit of "safety." All that paperwork and effort may not seem so bad when you consider the alternative.

Vol. 27 No. 1

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Bud Parke, senior artist for Grumman, painted the Grumman/Beech VTX aircraft contender on this month's cover.

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NAVY
NAVY

"No one said it was going to be easy"

By Maj David C. Beard, USMC (Ret.)

IT is appropriate to begin by stating that, as a naval aviator, I considered myself similar to many other pilots. Specifically, I had confidence in my aeronautical ability, was certain I could handle any emergency, and felt that fate would not permit an accident to happen to me. One could say I was at the head of the "*It won't happen to me*" line. But my spot is now vacant. Before you rush to fill the void, let me tell you what I had to do to lose my place in line.

I was an instructor at the Test Pilot School at Patuxent River and was in the back seat for a student's T-2C FAM flight. It was a gorgeous day in February 1980, with crisp, clear air and a beautiful blue sky. The flight was uneventful until I took the controls to demonstrate T-2C spin characteristics. The spin was normal; after five turns I applied anti-spin controls, the spin stopped, and all appeared normal. While in a 75-80-degree nosedown attitude at 20,000 feet MSL, I eased back on the stick to bring the nose up. It didn't budge. This took a split second to comprehend, after which I applied a considerable aft force, with the same result.

We plummeted downward, both the student and I trying in vain to get the nose up. It happened so fast! How futile I felt as nothing worked. My scan was outside the aircraft, as I began to fear flying into the ground. I remember sensing that the ground was starting to look close, at which time I checked the altimeter. It was racing through 9,000 feet. Seeing the altimeter, I realized I was fast approaching the altitude where NATOPS training had conditioned me to cease trying to regain control and eject. I had done all I could, and now the expert

(NATOPS) was there in the cockpit with me, figuratively yelling sound advice in my ear.

At Test Pilot School, SOP in the T-2 was for the front seat to have command eject. I called for ejection, and after nothing happened, reached down for the lower handle. As I did so, I thought, "Oh my God, I can't believe this is happening to me!" In this split second, I perceived that once I pulled the handle, my life would never be the same. I was right! I pulled and remember seeing the canopy rise, feeling a massive force, hearing the noise, and then . . . nothing.

Consciousness returned in an incredibly peaceful manner. I regained my senses as I hung like a broken rag doll beneath my parachute. The only sound I awakened to was that of the gentle, almost purring rush of air through the parachute canopy. It was ethereal. Beneath me, I saw where the airplane had impacted the water. Seeing no other parachute, I realized that for some reason I was the only one to have successfully ejected. I've never experienced greater sadness.

I had little feeling throughout my body. I grew frightened when I tried to move my left arm and couldn't. The arm felt as if it were detached from my body. Reaching above my head with my right arm, which was functional, I tried unsuccessfully to locate the Koch fittings. I must have been in shock and was not so much thinking as reacting with conditioned response, a fact which eventually led to my reaching down and pulling the right toggle of my LPA. The lower right side and upper left collar inflated which, in turn, forced my head down to a chin-on-chest position. Seemingly as a result of this pressure on my neck, I lost my vision but did not lose consciousness.

I've never felt more helpless. My body was essentially without function. I couldn't see and didn't know when or where I would land. I remember thinking at this moment that I was going to die. My thoughts shifted to my wife and three little children, and to them I said goodbye and hoped their lives would be joyous. For an instant, I was at total peace with myself. Then the fear of drowning started to consume me. I splashed down and went under water, praying as I did, "Please, please dear God, let me come face up." I did.

I didn't feel cold. I was in a dry antiexposure suit. I lay in the water, and within a minute or two, my vision returned and, with it, the fear of being dragged down by my parachute. I was hopelessly entangled, and only my right arm was functioning. After several more minutes, I heard the sounds of a boat and voices. I don't remember seeing anything except a long pole that was extended to me. As I reached for it, I inwardly pleaded, "Oh, please God, let me make it; don't take me now." Hands grabbed me, and with great difficulty, my torso harness was cut off. I was hauled up and laid out on a wooden board. I sort of felt like a fish, except I owed my life to those wonderful fishermen.

I was rushed to a local hospital where emergency blood transfusions and thermal blankets kept me alive. I was then MedEvac'd via helicopter to the Naval Regional Medical Center in Portsmouth, Virginia.

In the emergency room, major abdominal surgery was immediately required, but I could not be anesthetized for fear of losing me. For a brief second, I was conscious as the scalpel was inserted. Unconsciousness blissfully followed. I was kept alive by the surgeon squeezing the aorta closed to prevent blood flow to my lower extremities. In effect, I was bleeding to death even with three IVs of ongoing blood transfusions. This act saved me, for it allowed the blood supply to remain primarily in my upper body. After several hours and 34 units of blood in the emergency room, I was taken to the Intensive Care Unit (ICU) where my life hung in the balance for about a week. Infection and pneumonia were the greatest fears. After 10 days in the ICU, I was taken to the surgical ward to recuperate.

When I ejected, the estimated airspeed was 450-470 knots. The T-2C ejection seat has no leg restraints or chute opening delay. When I hit the airstream, my knees were totally dislocated. As the chute opened, my legs were split apart, fracturing my pelvis as it opened up like a book. The perineum area was split open, resulting in the displacement of some internal organs outside my body. My left elbow was fractured, and the arm sustained severe nerve damage, as did my right leg. The severity of the dislocation of both knees resulted in essentially all ligaments and tendons being destroyed. Both legs could be rotated below the knee in a 360-degree arc. Other than that and head-to-toe bruises, I was all right.

For about 20 days after my accident, I was conscious only at very infrequent moments. The pain was pretty bad. If pain were a 9-to-5 job, I would have had few complaints, but for 7 months, pain was usually a 24-hour-a-day, 7-day-a-week companion.

As I became cognizant of my condition, I realized my left arm was in a cast and my left hand hung limply down, unable to be moved. I had a *Hoffman Device* affixed to my hip bones. It looked like an erector set extending about 15 inches above my belly and was designed to pull together the fractured pelvis and hold it in place. I also had leg casts from toe to crotch on both legs. Through a tube entering my nose and descending into my stomach, I was fed a liquid diet of 9,000 calories a day. I was on my back – couldn't move, couldn't read, couldn't do anything – for 2 months. It was a particularly difficult time.

By the end of April, the casts were off, as was the *Hoffman Device*. The pelvis was stable, and now, instead of ligaments and tendons, I had scar tissue in my knees. Up to this point, I thought I'd experienced pain, but now came physical therapy. I was going to find out if I'd ever walk again. Ever so slowly I progressed, until I got to the point where I could be stood up and was able to withstand the pain. After about a

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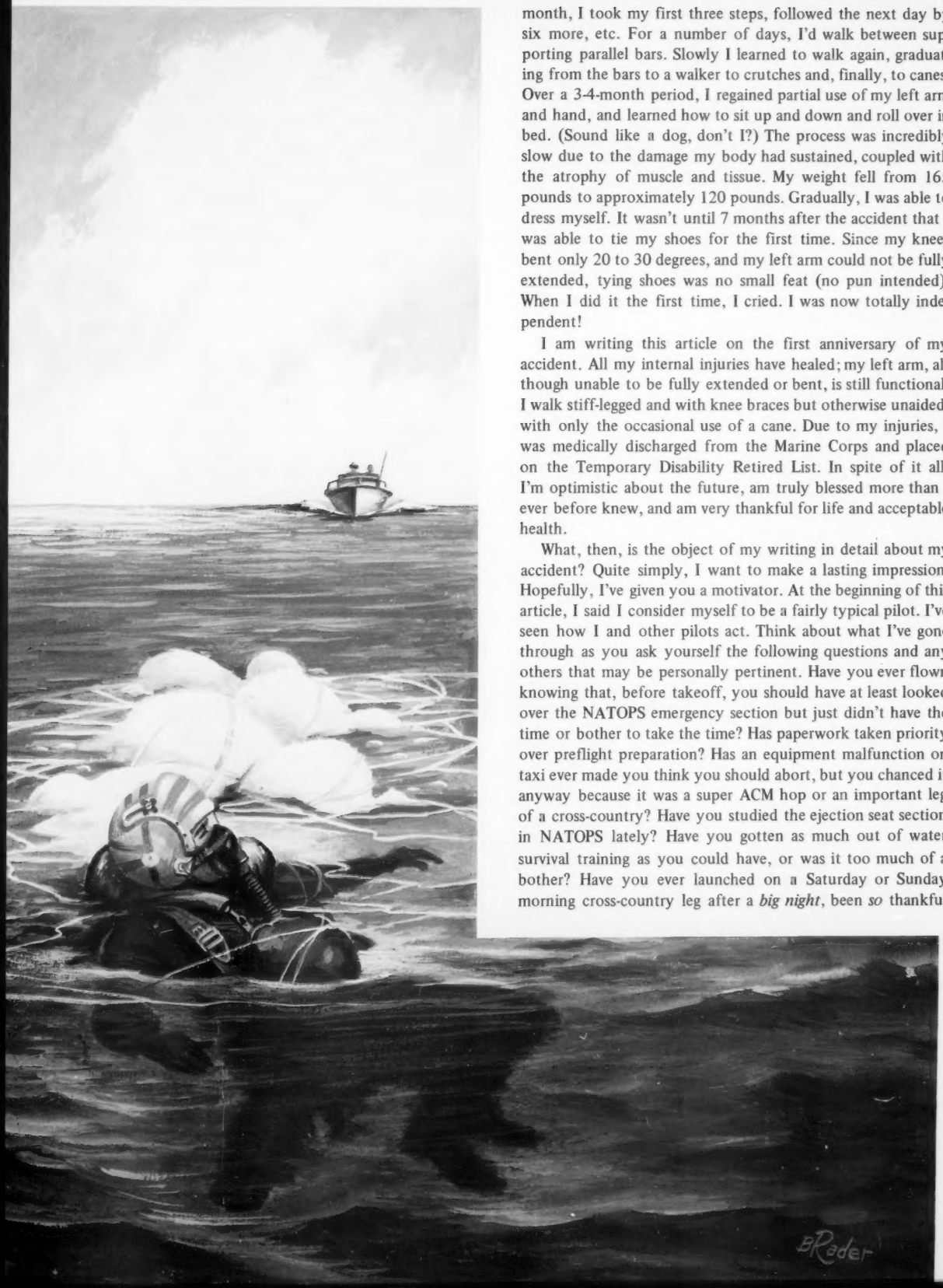


month, I took my first three steps, followed the next day by six more, etc. For a number of days, I'd walk between supporting parallel bars. Slowly I learned to walk again, graduating from the bars to a walker to crutches and, finally, to canes. Over a 3-4-month period, I regained partial use of my left arm and hand, and learned how to sit up and down and roll over in bed. (Sound like a dog, don't I?) The process was incredibly slow due to the damage my body had sustained, coupled with the atrophy of muscle and tissue. My weight fell from 165 pounds to approximately 120 pounds. Gradually, I was able to dress myself. It wasn't until 7 months after the accident that I was able to tie my shoes for the first time. Since my knees bent only 20 to 30 degrees, and my left arm could not be fully extended, tying shoes was no small feat (no pun intended). When I did it the first time, I cried. I was now totally independent!

I am writing this article on the first anniversary of my accident. All my internal injuries have healed; my left arm, although unable to be fully extended or bent, is still functional. I walk stiff-legged and with knee braces but otherwise unaided, with only the occasional use of a cane. Due to my injuries, I was medically discharged from the Marine Corps and placed on the Temporary Disability Retired List. In spite of it all, I'm optimistic about the future, am truly blessed more than I ever before knew, and am very thankful for life and acceptable health.

What, then, is the object of my writing in detail about my accident? Quite simply, I want to make a lasting impression. Hopefully, I've given you a motivator. At the beginning of this article, I said I consider myself to be a fairly typical pilot. I've seen how I and other pilots act. Think about what I've gone through as you ask yourself the following questions and any others that may be personally pertinent. Have you ever flown knowing that, before takeoff, you should have at least looked over the NATOPS emergency section but just didn't have the time or bother to take the time? Has paperwork taken priority over preflight preparation? Has an equipment malfunction on taxi ever made you think you should abort, but you chanced it anyway because it was a super ACM hop or an important leg of a cross-country? Have you studied the ejection seat section in NATOPS lately? Have you gotten as much out of water survival training as you could have, or was it too much of a bother? Have you ever launched on a Saturday or Sunday morning cross-country leg after a *big night*, been *so* thankful

you could breathe 100 percent oxygen, and down deep felt, "Boy, I hope nothing happens on this leg"? I could go on, but the point is: we've all taken chances, some perhaps avoidable, but many that were not. I think I now speak with a degree of credibility when I say none of these chances are worth it.

Even though accidents over which we have no control will occur, it is critically important to do as much as possible to ensure that the *safety deck* is stacked in our favor. Safety lectures and practicing safety can be, at times, a bore. Maybe that's why we take the path of chance, as it's probably more fun and definitely easier. During a particularly rough period in the hospital when I was surrounded by self-doubt, bitterness, and the thoughts of "Why me?" and "Can I make it through this?", my wife said to me, "You know, David, no one said it was going to be easy." I bet I repeated that 100 times thereafter whenever I started to feel sorry for myself. I think in some ways practicing safety is analogous to my recuperation efforts. It may not be fun, and it may be a boring yet demanding and difficult discipline. But just because of that, should it not be done? Think about it – no one said practicing safety would be easy.

After I had been in the hospital for over 3 months, I was able to go outside for the first time. I was in a wheelchair and with my wife and children. It was an experience I shall never forget. As my wife, Amy, wheeled me out the doors into a beautiful spring day, I felt the sun on my feet, and as I was pushed into the sunlight, felt the sun's comforting warmth creep over my entire body. I hadn't felt the sun on my face in so long. Then I saw the trees and grass bending gently with the breeze and heard the sweet sounds of the rustle of leaves and the singing of birds. It was as if I had never really listened before. And the breeze; I'll never forget being kissed by the breeze. One takes it for granted, but when deprived, the return of the touch of breeze is beautiful. As I was wheeled out on a walkway near the hospital, my children were laughing and playing. They were happy and so innocent as they sang and giggled while running around my wheelchair. I shall remember always my joyousness and how thankful I was to be alive when my children proceeded to pick up fallen magnolia blossoms and put them on my lap. How we take for granted the precious things in life.

Making safety paramount and working at it on a daily basis won't be easy, but no one promised you it would be. In being doggedly determined in your efforts, however, at least you are doing all you can to stack the *safety deck* in your favor. It's worth it! Please believe me when I echo the words of a song that are so very true: "You really don't know what you've got, until you lose it."

Ever heard of Haldol?

By CDR J. A. Gessler
Aeromedical Safety Officer
COMNAVAIRLANT

THE Truth in Labeling Act for drugs is not enforced by street dealers. Emergency rooms in some parts of the country are now seeing patients complaining of spasticity and tremors of the type normally associated with Parkinson's disease. These obviously frightened individuals often admit to taking *Valium* obtained from a street dealer, but this makes no sense. *Valium* is dangerous, but it cannot produce these symptoms.

It turns out that, with the attention given to *Valium* by the authorities in recent years, other dangerous drugs have become much easier to obtain. One of these, *Haldol*, a drug sometimes given to psychiatric patients, comes in a little yellow tablet very similar to *Valium*. It was inevitable that the switch would be made. It was, and the frightening symptoms mimicking Parkinson's disease, known side effects of *Haldol*, were the result.

If this has happened in the civilian drug scene, it is only a matter of time before it finds its way to our ships and shore stations. After all, the dealer's object is to make money, not to care for his customer. Be aware and beware!

FOD

Is it ALL eliminated?

By Bill Peters
APPROACH Writer

THE Tool Control Program was instituted some 8 years ago. Its purpose is to eliminate the possibility of an aircraft being released for flight with a tool adrift within the airframe that might foul free operation of controls or control surfaces or be responsible for FOD to engine(s) or engine components. The success of this program has been remarkable and has fulfilled most of the following original objectives:

- Elimination of individual toolboxes.
- Standardization of toolboxes to reflect tool requirements for use by a particular rating within a particular aircraft community.
- Significant reduction of initial outfitting and tool replacement costs.
- Toolboxes that may be visually inventoried in a few seconds *before and after each use*.
- Immediate access to the *right* tool at the right time.
- Confidence by each and every maintenance worker that no tool was left adrift when the maintenance action was completed.
- Positive and *continuous* accountability by the supervisor for all tools *and* boxes assigned to a work center.

Now, is it possible to sit back and rest on the laurels of a smooth and efficient Tool Control Program knowing that we have a **Zero-Defects** FOD control program? The answer is a big, emphatic "*Negative*"!

A series of recent incidents in aircraft of various communities has revealed the presence of a brand new source of concern in the business of maintaining a **Zero-Defects** FOD environment within our heavy birds, as well as smaller, tactical aircraft. A few of these incidents are listed below:

- An empty metal coke can was discovered interfering with electrical connections within the main electrical distribution panel of a transport aircraft.
- A cracked portion of the instrument lighting panel lodged in the roll control linkage of a tactical jet aircraft.
- An empty peanut jar became lodged in an area that caused binding and restricted movement of the rudder cables in a transport aircraft.
- A portion of the pilot's visor assembly cracked in flight and became lodged in the lateral control linkage of a tactical jet aircraft.
- A passenger's camera case was dropped in the cockpit and restricted both lateral and longitudinal controls in a light, tactical jet aircraft.

An effective Tool Control Program within your squadron will ensure that errant tools will not compromise your ability to successfully complete your mission. But the introduction of unnecessary, and often *unauthorized*, items into a tactical or support aircraft can negate all these efforts and set your unit up for another FOD-related aircraft mishap! Let a word to the wise be sufficient!

ONLY A SHORT CRUISE

By LCDR G. H. List
HSL-31

WE were returning from a very successful at-sea exercise onboard a CG-26 class cruiser. The exercise had paid tremendous benefits in terms of predeployment training, and we were all anxious to get home for liberty. But...hold on "ole' salt"! Late in the day, the CO notified us that our deployed staff had arranged for one more exercise prior to reaching port.

It sounded simple enough. All we had to do was take off in our trusty SH-2F at 0100, fly out 30 miles, drop a passive barrier, and work with two H-3s to locate and track a diesel-electric submarine attempting to penetrate the task force screen. No sweat!

We received our brief in CIC and then moved aft to preflight the aircraft in the hangar. The aircraft was satisfactory, with the exception of a small amount of hydraulic fluid on the transmission deck under the combining gearbox. We had found the hydraulic fluid on a previous flight. However, after thorough checks, our maintenance crew was unable to locate a leak, and the aircraft was released for flight.

We spotted the aircraft on deck and spread the rotor blades. The horizon was very dark, but the sky was clear and full of stars. Visibility was good, and the sea was relatively calm. This contrasted sharply with the days earlier when we had experienced rain, heavy seas, and 40- to 50-knot winds.

I made a last-minute walkaround and broke down the tail pylon chains. I gave my eyes time to adjust to the darkness prior to strapping in.

Start, engagement, systems checks, and launch were all normal. We were "wheels in the well" at 0105, en route to our eastern search area. We arrived on station 20 minutes later and dropped a prebriefed passive barrier. We established communications with our playmates and flew MADVECs for an H-3 in a dip.

We had been airborne for about 1 hour, and my copilot was flying a MAD tracking pattern over our exercise submarine. We were maintaining 90 knots at 300 feet in a left-hand turn when the ASE light illuminated. The aircraft began to roll left, and the nose pitched up. I looked at my copilot in the left seat and said "What did you do?" With a surprised expression, he looked back at me and said, "Nothing, I thought you did it." I took the controls, leveled the wings, and lowered the nose. We began experiencing control kicks immediately, and shortly, the hydraulic pressure caution light illuminated. I disengaged the boost by using the pilot's collective disengage button and beeped the rotor RPM down to 102 percent while my copilot reeled up the MAD bird. We contacted the ship, declared an emergency, and reported our position. Although the ship had closed the range between us since our departure, they were still 20 miles away. We checked our range and bearing from the nearest NAS on our TACAN. We were 20 miles out and decided that a boost-off, night landing to a runway was preferable to a night, boost-off landing aboard a CG-26 class cruiser. We announced our intentions to the ship. We would

proceed to the beach and requested the ship to flight follow until we were in radar contact and communicating with the local controlling agency.

At this point, we discovered that the controlling agency for our warning area was no longer operating (it was after 2300). Consequently, one of our H-3 playmates decided to join up and escort us in.

En route to the beach, the copilot and I discussed the possibility of a hydraulic pump fire after the hydraulic fluid went over the side. The sensor operator was alerted and kept an accurate plot of all surface contacts and ranges in the event it became necessary to ditch the aircraft. We reviewed planned ditching procedures and decided that our escort H-3 would be our primary rescue vehicle. We communicated our intentions to the H-3. He agreed to position his aircraft aft and above ours and to advise us of indications of a hydraulic pump fire. Next, we discussed landing on the beach if a hydraulic fire flared up prior to reaching the runway.

Approaching 7 miles south of the NAS, we advised the ship that we were going to contact the control tower prior to entering the airport traffic area. My copilot switched to button three on the UHF but got no radio contact. Previously, we had rechannelized all of our preset frequencies to agree with the frequencies we used at sea. (We had planned on changing our radios back to standard configuration the morning we were to arrive in port.) We wanted to ask our escort for the tower frequency, but he had already switched. We finally established communications with the tower on Guard and were cleared to land on a taxiway.

After landing and securing the aircraft, our postflight revealed a massive hydraulic leak. The starboard side of the aircraft from the engine oil tank sight gage area aft was coated with fluid which ran off the aircraft and accumulated in a substantial puddle on the taxiway.

Days later, our detachment maintenance crew found a pinhole in the hydraulic line which had resulted from chafing on a fitting in the area between the combining gearbox and the decking below. We thought squadron maintenance should be told of the problem and inspect other squadron aircraft for a similar discrepancy. The squadron maintenance control chief said, "Yea, we know all about that. We checked all squadron aircraft, except detachment aircraft, as a result of an incident report we received a week or so ago."

My mind traced back over 2½ weeks of operations at sea and over 75 hours of flight time. I thought about day and night flight operations many miles from land and without a large deck or island nearby. I thought about 1 week of heavy seas, rain, and gusting winds which surely would have had an adverse effect on a deck, boost-off landing at sea. Finally, I asked why no one had thought to readdress the message concerning the hydraulic leak problem to us while we were at sea. The maintenance chief looked up from his paperwork and shrugged as he said, "Yours was only a short cruise." ◄

B

BRAVO

LT Tom G. Hanson

JUST as his A-7B lifted off the runway on an IFR training flight, LT Tom Hanson of VA-1476, an augmenting unit of VA-305, was confronted by numerous birds at and below his flightpath. Before he could take any evasive action, he felt several thumps from bird impacts, followed by engine vibrations. He immediately declared an emergency with Pt. Mugu Departure Control, commenced dumping fuel, and requested a GCA. LT Hanson extended his emergency power package and continued to climb through the overcast until he was on top at 1,800 feet.

GCA brought him down through the overcast for an actual instrument approach. He was using 80 percent rpm for an airspeed of 165 KIAS. LT Hanson was experiencing compressor stalls and engine instability throughout the approach but was able to make a successful arrested landing. This action-packed flight lasted a total of 5 minutes.

By his professional skill, LT Hanson saved his aircraft from destruction. He reacted quickly and professionally to a major emergency that was complicated by bad weather. The bird ingestion caused catastrophic damage to the first stage compressor which, in turn, FODed the entire engine.

In addition to LT Hanson's display of excellent airmanship, he was greatly aided by the outstanding assistance of Pt. Mugu Departure Control and the GCA unit. Professionalism and teamwork saved this aircraft!

LCDR R. J. Nibe

A SUDDEN loss of thrust on the downwind leg of the FCLP pattern is guaranteed to get the adrenaline pumping and increase the heart palpitations. This occurred to LCDR Rich Nibe of VA-147 when his engine lost power in such a situation. His fuel flow was stuck at 2,500 pph, and his A-7 immediately went into a 1,200-1,500 fpm descent.

LCDR Nibe correctly diagnosed the problem as a fuel control malfunction and selected manual fuel control while maintaining the aircraft at the optimum angle-of-attack. He fought the urge to jam the throttle to MILITARY, realizing that to do so might cause a flameout. As he cautiously advanced the throttle to MILITARY, the engine responded.

At this point LCDR Nibe judged that he had sufficient altitude to arrest his descent. After maintaining the optimum angle-of-attack throughout the descent, he started to climb when the A-7 reached 150 feet AGL.

His cool reaction, skill, and prompt execution of NATOPS procedures saved a valuable aircraft and quite possibly his own life.

This incident graphically points up the need for pilots not only to know the proper procedures, but also to understand their aircraft, its aerodynamic and system limitations, and to be able to evaluate an emergency situation promptly. In this instance LCDR Nibe stated that if he had missed actuating the manual fuel switch on the first try, he probably would not have been able to recover the aircraft.

Z

ZULU

PHANTOM PHLYERS' PHLAP PHIX

By Bill Peters
APPROACH Writer

FOLLOWING a routine daytime launch from a CV in WESTPAC, the crew of an F-4S noted erratic pitot-static system indications. Initially, airspeed was reading zero and the altitude was locked on 1,000 feet. In accordance with NATOPS procedures, the pilot continued his climb to VMC-on-top, with primary reference to AOA, and completed his assigned mission.

The *Phantom* was cleared to descend to 2,000 feet for a straight-in approach to the carrier. After leveling off utilizing AOA and radar altimeter readings, the pilot *dirtied up* using normal procedures. The crew noted airspeed excursions between 0 and 200 KIAS and an altimeter reading of 4,000 feet. The RIO confirmed that the flap/slat configuration was

in conformance with the selected position, and the pilot continued his approach until receiving an overweight waveoff and clearance to a downwind leg.

The RIO again confirmed the correct flap/slat landing configuration prior to the abeam position, and the pilot set up for a VFR recovery noting "a little fast" (17 units AOA) start. The pilot noticed "significant deceleration" as he passed the 90-degree position but adjusted his power and settled down to continue, maintaining 18.3 units AOA. Other than a call from the LSO noting that he was "a little bit flat," he continued, came aboard, and engaged the No. 2 crossdeck pendant **with his trailing edge flaps in the up position**! The experienced F-4 LSO did not notice the unusual configuration until the aircraft was inside the refusal window. The crew was unaware of the actual flap position until being debriefed by the LSO.

The crew noted a slightly higher deceleration rate during runout and an indicated airspeed of 400 knots prior to shutdown. Actual runout was 180 inches (within limits), and postflight inspection of the aircraft revealed no structural damage to the landing gear or arresting hook.

Unfortunately, our story does not end here. Maintenance technicians noted the 4,700 feet and 400 KIAS indications in both cockpits, located a misrouted static line pinched beneath the pilot's radar command indicator, and bled the system pressure to zero. The TTU-205 pressure/temperature test set was not utilized to verify correction of the system discrepancy, and the aircraft was released for flight after 1 hour of downtime.

The same aircraft was launched during the next cycle and experienced another system malfunction with the altimeter unwinding to minus 500 feet and the airspeed reading zero. The mission was completed, and the mishap aircraft joined with a playmate for a section penetration and approach. Passing 5,000 feet, the airspeed wound up to 400 KIAS and the altimeter indicated just less than 4,700 feet.

When the pilot attempted to *dirty up* at 1,200 feet, he found he could not get the flaps to extend. The RIO broke the glass in the rear cockpit altimeter, and after about 30 seconds, the pressure bled off to below flap blowup speed and the flaps lowered normally. An uneventful carrier arrestment followed.

Postflight inspection of the system revealed a static pressure line pinched against the radome top ballast block. The TTU-205 pressure/temperature tester was used to verify correction of the discrepancy this time, and the aircraft has flown subsequently with no further trouble.

Other than the obvious premature release of the aircraft by maintenance for flight, we have to look at several other characteristics that are significant to the latest Navy/Marine Corps *Phantom* configuration:

- The maneuvering slats will remain extended, once activated, as long as the AOA remains higher than 10.5 units.
- The addition of ballast in the radome of the F-4S has added a new potential for maintenance-induced pitot-static system malfunctions. A new emphasis must be made to ensure maintenance personnel are acutely aware that all pitot-static system lines must be clear and uncrimped **every time that the radome is closed**.
- Even experienced F-4B/J/N and RF-4B LSOs must be particularly vigilant in observing and reporting the trailing edge flap configuration when conducting F-4S carrier recoveries. The incremental increases in aircraft attitude and approach airspeed are relatively small. They will not necessarily alert shipboard personnel of a trailing-edge-flap-up configuration and the associated hazard of inadvertently exceeding arresting gear limit loads.
- The increased lateral control effectiveness and decreased PA configuration buffet due to the reconfiguration of the drooped ailerons may not alert the aircrew to a possible uncommanded trailing edge flap retraction during a critical phase of flight (e.g., following night, IMC catapult launch or during the final phase of the landing approach).

The F-4J/Ns will be active members of the *Phantom* community for some time, so let's take a look at the aerodynamic characteristics of a possible similar pitot-static system dysfunction:

- The slats **and** the flaps will retract in about 6 seconds on the F-4N/J if the airspeed increases to above the flap blowup speed irrespective of angle-of-attack, gross weight, or aircraft configuration.
- The flap-up stall speed is approximately 28 knots higher than with the normal PA flap/slat configuration.

It goes without saying that the uncommanded retraction of the flaps/slats in the heavy takeoff configuration or in the carrier approach configuration is undesirable and potentially disastrous. Flightcrews should be made aware of this possibility when faced with a pitot-static malfunction and be prepared to bleed off static pressure by breaking the glass in the rear cockpit altimeter to ensure zero airspeed indications prior to final approach. This is especially insidious in the F-4N/J configuration since both flaps and slats will retract within 6 seconds, requiring an additional 28 knots of airspeed to maintain controlled flight as well as rapid crew diagnosis and reaction.

Know your systems and be alert for forthcoming changes to your NATOPS which will expand this vital area regarding safe flight with a malfunctioning pitot-static system. Don't let yourself get "led down a primrose path" and end up in that *Phantom Phlyers' Phlap Phix!*

How to rig a rock

By LT Robert W. Krattli

I CAME very close to killing 13 people, myself included, by flying my P-3 into a well-charted rock. I think the lesson my crew and I learned is well worth telling.

This very near-miss occurred during the 1975 deployment of our P-3C squadron to Misawa, Japan. I was the PPC on Crew Four, having held that position almost 10 months. I was a first tour aviator on my third WESTPAC deployment. My TACCO was a second tour lieutenant commander. My crew had been assigned to fly a search track south and east of Japan for the second time in one week. The track weather was clear except for an isolated east-west storm line across the southern end of the track. The cloud cover, while very localized, was almost solid from 500 feet up to 10,000, with a layer at about 4,000. Under the storm were many isolated heavy rain showers.

The search was uneventful until the final northbound leg. At this point, I came within a few short feet of flying

my aircraft into the side of a well-charted, 1,094-foot-high rock. One small procedure I picked up while flying out of Adak, Alaska was the only reason 13 people did not die that morning. I'll pick up the conversation in the cockpit at the start of the run-in.

We had just reentered the storm line. I was flying in the left seat with a newly arrived second tour lieutenant commander (Larry) acting as copilot. My TACCO was sitting at the NAVCOM station, and the NAV was sitting in as TACCO, getting some position training. Our crew Sensor Station 3 Operator (SS-3), an AWAN, was at his radar scope. Radar reported a contact, and the acting TACCO initiated a run-in.

PILOT: Radar, where do you hold him now?

RADAR: Flight, he's 250 at 27.

PILOT: Roger.

PILOT: Larry, this stuff is getting worse. I'll try HIGH on my wipers; maybe it'll help. The scope fly-to-point agrees with Radar, so it looks good.

COPILOT: We keep going in and out of this stuff. I can't see much.

PILOT: Radar, keep those positions coming – where is he now?

RADAR: Contact bears 245 at 12.

COPILOT: I can't see anywhere but straight down.

PILOT: Yeah, I can't see much either. I'll stay at 500 feet until we see him. We seem to be missing the worst of the rain.

PILOT: Radar, we're inside 10. Where is he?

Radar?

Radar, this is flight!

TACCO, where's SS-3?!

TACCO: Radar?

PILOT: Larry, the scope says we're inside 3 miles and I can't see the target. I'm breaking off the run to the right. Engineer, set 925...@&%**&&! MAX POWER!!!!!!

Just as I started my turn, the "ship" appeared out of the crud straight ahead of the P-3 – the Granite Maru, 1,000 feet high and 2 miles wide. I twisted the P-3 hard to the right, continuing my turn as the Flight Engineer poured on the juice. As the aircraft rolled past 80 degrees, I glanced "down" from my side window. All I could see were brush and rocks passing close under the aircraft.

Just as fast as it had appeared out of the rain, the rock disappeared. The P-3 was rolled level and a max power climb was continued above the surrounding terrain. The ICS immediately heated up with calls from the tube asking what was going on! I turned the controls over to the copilot, who later said he never saw a thing. The copilot flew large, smooth circles while I tried to calm down, and the crew put the loose gear back where it had been stowed.

Let's take a closer look at this near-miss to learn how this accident chain was slowly forged and finally broken just short of the rock face.

I had been lulled into a very relaxed attitude by the smooth flight over a track completed just a few days prior. The crew TACCO had allowed the NAVCOM to take his seat to gain some valuable position training. The acting NAVCOM then got involved in transmitting a message. The crew NAVCOM was very busy setting up for the next fly-to-point and the trip home. And the crew SS-3, new to his position, was busy working the target with no supervision.

The acting NAVCOM had borrowed the flight station copy of the track guide to aid in preparing a message, thereby preventing the flight station from confirming the very accurate LAT/LONG displayed on the pilot's scope. The SS-3 had mistakenly entered the position of the contact on two different display scales, obtaining a computer generated course and speed which to him meant a ship. The very slow speed (less than 8 knots) was not passed over the ICS, and the flight station did not ask for it. Neither did the acting TACCO check out the target parameters. The final link was the radar unit going down about 10 miles out, preventing the SS-3 from seeing the very evident radar signal masking characteristic of a tall target. He also failed to inform the crew that his station had gone down and had climbed out of his seat to look for the inflight technician when the PPC was calling for him.

The procedure that finally broke this chain of complacency was picked up by the PPC while flying out of Adak where poor weather and uncharted islands are routine. Offset radar run-ins and 3-mile breakoffs are required by common sense. If you cannot see it, you do not fly close to it.

My flightcrew was very experienced, highly trained, and too complacent. I should have checked the chart prior to commencing the run-in. The acting TACCO should have had better control over the coordination of the run-in. The acting NAVCOM should have plotted the contact and been monitoring his TACCO trainee closer. The SS-3 should have immediately informed the TACCO of his system failure so the run-in could be aborted.

The old saying "AVIATE, NAVIGATE, and COMMUNICATE" still holds true, even in an aircraft as sophisticated as a P-3C. My crew forgot this wisdom for a few short minutes and came very close to being a smoking hole in the side of a mountain. ◄

By Richard A. Eldridge
APPROACH Contributing Writer

Ill-fated

A CROSS-COUNTRY flight in the naval aviation community has always been looked upon by the aircrew involved as something of a "benny" – a little something extra. In the single-piloted aircraft, it involves only the pilot; in multi-piloted aircraft, it involves the whole crew. Individuals or total crews, as the case may be, usually look forward to the change of pace offered by a cross-country flight. It could be as mundane as a 3-hour flight from Pt. A to Pt. B in the morning and back again the same day. Or it could entail a flight from one coast to the other, covering several days.

There are both advantages and disadvantages to cross-country flying. One advantage is that it gives an individual pilot or plane commander the chance to make decisions affecting such things as safety of flight, maintenance of the aircraft, and other factors not always covered in detail by NATOPS or SOP. In other words, it gives the responsible individual the chance to exercise mature judgment in arriving at well-thought-out decisions. On the other side of the ledger, however, it doesn't always work out for the best. Sometimes wrong decisions are made, and aircraft accidents result.

The cross-country to be discussed falls into the latter category. It involved the four-man crew of an HH-2D helicopter with one passenger embarked. The preliminary planning and administrative paperwork were completed in accordance with squadron SOP, and the flight was authorized as an RO2N with the return on the third day.

The purpose of the flight was to obtain instrument training and airways navigational proficiency. The flight was planned for departure from NAS Midcoast to NAS North with two en route stops. The flight would take 1 day. No flying was planned for the second day. On the third day, the crew was scheduled to return to NAS Midcoast.

The crew was very experienced and well qualified, consisting of the HAC (LCDR), copilot (LT, also a designated HAC), a pilot (LCDR) undergoing instructor training, and a crewman (AW2). An airman was aboard as a passenger.

The squadron NATOPS and QA officers had flown the same helo the day before and had not reported any downing discrepancies. A minor nose oscillation discrepancy was noted, but it was not considered a downing gripe.

Shortly after takeoff on the first leg of the flight, the crew discovered that they had both a TACAN and a UHF discrepancy and returned to NAS Midcoast to have them fixed. Only the TACAN discrepancy was fixed. The helo was equipped only with one UHF radio. A second departure was made at 1351 for NAS Central. About an hour into the

cross-country

flight, the crewman reported a hydraulic leak on the decking behind the copilot's seat. After landing at NAS Central, following a below minimums instrument approach, an attempt was made to get the hydraulic leak repaired. An AMH2 inspected the hydraulic leak and found hydraulic fluid all over the deck and in the scuppers. He tightened a B-nut and the helo was then turned up to check the leak. The leak had not stopped, and the AMH2 recommended to the HAC that the helo be downed. Very limited maintenance facilities were available, however, as AIMD was secured for the weekend. Because of this, the HAC wanted to continue the flight, hoping to get the leak fixed at the next stop. His mind-set was more in favor of pressing on than getting the leak fixed. The HAC filed two separate flight plans to continue the flight but was thwarted each time, once due to weather and once to undesirable IFR routing which would not have allowed sufficient fuel to fly to an alternate. Frustrated and disappointed, the crew tied down the helo and spent the night at NAS Central.

A phone call was made to the parent squadron informing Operations of their decision to RON at NAS Central and discussing the hydraulic leak. The HAC told the squadron of his intention to fly to NAS Nearby, about 50 miles away, where more adequate maintenance facilities were available. Although the hydraulic leak was at first believed to be in the automatic stabilization equipment, it was eventually determined that the leak was coming from the landing gear return line. There are indications that the crew was unaware of this.

Continued

The squadron concurred with the HAC's decision to fly to NAS Nearby the next morning.

Despite poor weather and a still marginal UHF radio, the crew departed at 1139 the next morning and flew to NAS Nearby. To fix the leak, maintenance troubleshooters removed a section of the hydraulic line in order to manufacture a new section. The newly manufactured landing gear return line was tested and installed. NATOPS requires that a dropcheck be performed following the installation of a landing gear return line, but this was not accomplished. Squadron SOP required that a NATOPS manual and MIMs be in the aircraft on a cross-country flight, but neither was aboard.

A second telephone call was made to the squadron informing the SDO that the hydraulic leak was fixed and that the crew was proceeding to its next stop – Able AFB.

Departure from NAS Nearby in IMC and less than desirable weather was made at 1610. The crew continued to experience difficulties with radio communications, but elected to press on. The HAC's flight plan called for a fuel stop en route to Able AFB. Upon arrival at the planned fuel stop, they were diverted to another field because of an unscheduled operational readiness inspection which was going on. The crew landed at the divert field and was refueled. Takeoff for Able AFB on the fourth leg of this extended cross-country was made at 1847. They arrived at 2047. Except for experiencing extreme difficulty with their radio communications, the flight was uneventful. They were able to receive only on Guard but could transmit on the assigned frequency. After leaving instructions to repair the radio, the HAC and his crew spent the night at the AFB. Once again, the HAC called to inform the squadron that they were going to RON at Able AFB and proceed to their original destination the next morning. He did not notify the squadron of the continuing difficulty with the radio, nor was it repaired.

The following morning a flight plan was filed from Able AFB to NAS North. Departure was at 0852. Weather at the time of takeoff was 800 feet overcast, with 2 miles visibility. Their destination weather was forecast to be 400 feet broken, 800 feet overcast, with 2 miles visibility in fog (not exactly a piece of cake with a malfunctioning radio). Weather at their alternate, Baker AFB, was forecast to be considerably better than the destination weather.

Immediately after taking off from Able AFB, two-way radio communication was established, but with intermittent and garbled transmissions. The crew was also experiencing a problem with their transponder. Approximately 30 minutes after takeoff, with no en route radio contact, the helo was observed by the controlling radar facility to be level at 5,000 feet in the vicinity of an en route VORTAC station. At that time, Center handed the helo off to Charley AFB Approach Control. The crew was being tracked at a groundspeed of 112 knots at the time of handoff. Immediately thereafter, the helo was observed to make a 24-degree course change to the left and slow to a groundspeed of 68 knots, still remaining at 5,000 feet. Within the next minute, the helo climbed to 5,100 feet and increased its groundspeed to 120 knots. The helo was next observed in a 30-degree course change to the left, concurrent with a 90-knot groundspeed and a gradual descent. Within 1½ minutes of the first course change, the helo had turned 189 degrees off course to the left and descended to 4,600 feet at 1,000 feet per minute.

At 0932, Charley AFB Approach Control tried three times to contact the crew on Guard, with negative results. The helo had last been observed by the en route radar control center indicating an altitude of 4,600 feet. Then contact was lost. Charley AFB Approach Control requested the crew squawk IDENT on its transponder. After the third request, the HAC responded to the IDENT request. The radar readout indicated an altitude of 1,300 feet. Minimum en route altitude (MEA) for this segment of the route was 2,000 feet. At 0934, Charley Approach Control broadcast to the helo that radar contact had been lost. At 0938, the crew was instructed to squawk code 7700 (the emergency identification code), but no response was noted. It was later determined that the helo crashed at about 0932, with fatal injuries to its five occupants.

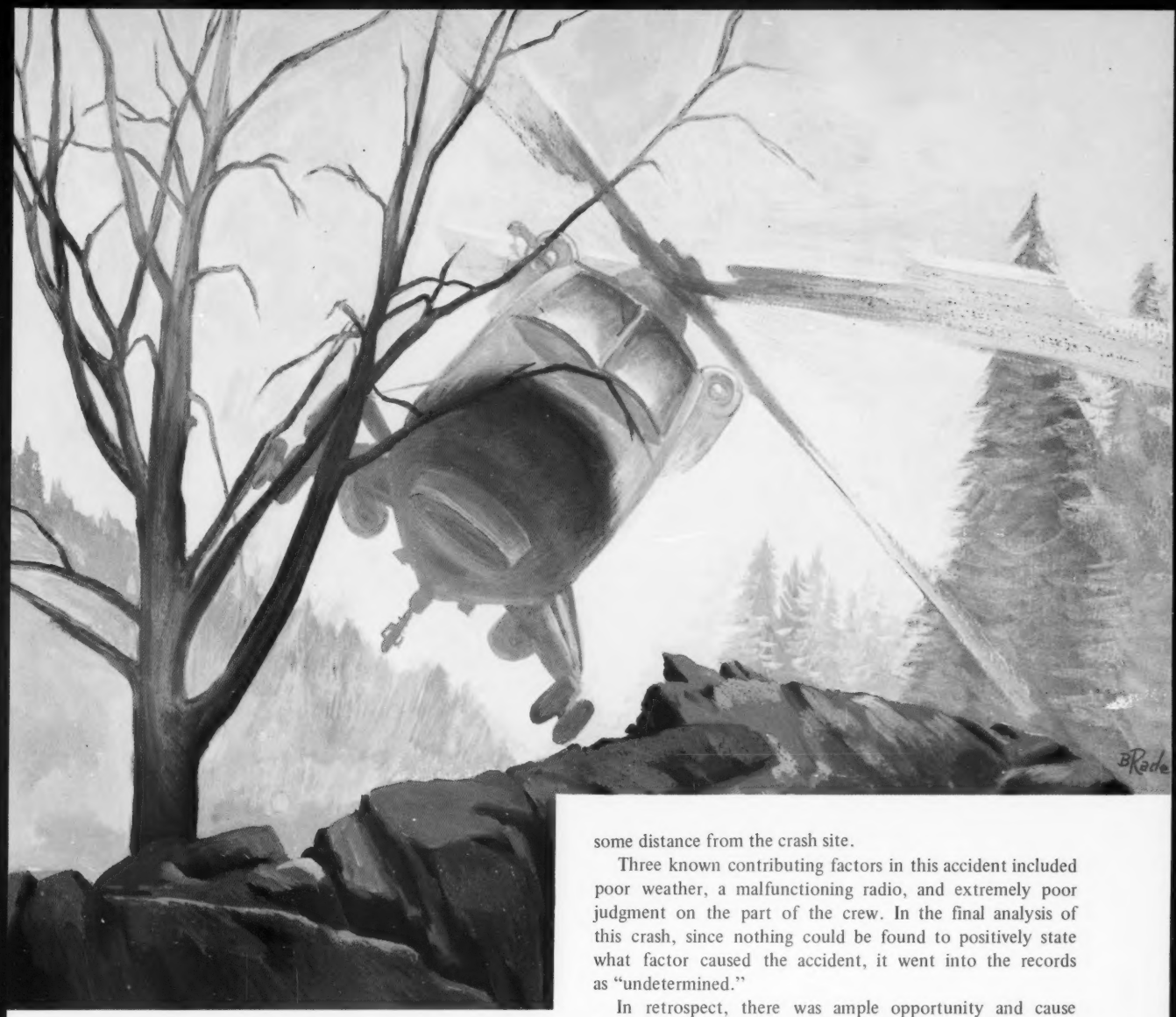
Two-way radio communication was never established with Charley Approach Control. The crash site was approximately 2-3 miles from a civilian airport.

Many residents of the area were interviewed following the accident. Nearly all those interviewed reported hearing noises described as chugging, sputtering sounds, severe misfires, high-intensity, low-frequency noises, and other descriptions consistent with that of a helicopter struggling to stay airborne. One expert witness, a former Marine Corps helicopter test pilot who presently flies with the airlines, heard approximately four cycles of helicopter rotor blades flapping. Most witnesses and residents interviewed near the crash scene reported doors and windows which shook, houses that quivered and vibrated, and the noise of the impact and explosion.

Investigation at the scene of the crash revealed that the aircraft had impacted in a steep left bank and left yaw, with the main rotor blades making first contact with the ground. It slid for a distance of 130 feet before coming to rest and being consumed by a fuel-fed fire.

A very thorough investigation of this accident was made. All parts of the aircraft which had not been consumed by fire were recovered from the scene of the crash. The investigation revealed nothing other than impact to structural members and dynamic components, and no malfunctioning system components.

A second HH-2D was used to fly a similar profile to that flown by the mishap aircraft. Radar transponder contact with the Center was maintained down to as low as 550 feet AGL in both the normal and low sensitivities. Radio transmissions from this aircraft could also be heard at and below this altitude. Area residents reported that the sound level of the profile helo was lower than the noise heard prior to the mishap, even though the profile helo was partially flown in an intentional blade-out-of-track condition.



No reason could be found for the fact that the helo left its assigned altitude of 5,000 feet. Since the helo descended below the MEA of 2,000 feet, the opinion was that the crew was experiencing an actual or perccived malfunction of some sort. From the investigation, it was determined that the landing gear were down and the helicopter doors were open at the time of the crash, thereby indicating that the crew had definite intentions to land as soon as possible. This is also supported by the fact that an aeronautical chart, IFR en route supplement, pilot's circular computer and case, and a shaving kit were recovered at various points outside the periphery of the field at too great a distance and in too good a condition to have been blown there by the postimpact explosion. The investigators opined that either the helicopter was vibrating significantly or that it was being piloted out of balanced flight, causing a forced wind rush through the cabin. This could account for the above items being found some distance from the crash site.

Three known contributing factors in this accident included poor weather, a malfunctioning radio, and extremely poor judgment on the part of the crew. In the final analysis of this crash, since nothing could be found to positively state what factor caused the accident, it went into the records as "undetermined."

In retrospect, there was ample opportunity and cause for the HAC to have aborted the flight upon several occasions. Viewed from the very beginning of the flight to its termination at the crash site, the whole scenario could be looked upon as a decision to press on at all costs. The recommendation by the AMH2 to down the aircraft was ignored. Aside from personal reasons, there was no compelling force to press on in view of the bad weather, other than the desires of the HAC and crew. The mere facts that the radio was almost incapable of functioning during the entire trip and that the flight was conducted in an improper manner for instrument flight in IMC should have caused an enroute cancellation.

One final comment concerns the qualifications of the HAC and copilot. They were used to making decisions, as both were former officers-in-charge of LAMPS detachments. With their combined experience and qualifications, they should have acknowledged the warning signs of the aircraft and the weather conditions instead of succumbing to "can-do-itis" and pressing on. ◄

PILOT ERROR: A little fun?

By CAPT Thomas V. Golder
CNO, OP-636

"Taxi off the taxiway at night" or **"Salvage a landing from a poor approach that should have been a waveoff."** Which would you rather have happen to you? That's like asking whether you would rather hit your thumb with a hammer or drop a brick on your toe. The answer is obvious: neither. But if one were to happen, which would you rather it be? What would your attitude be toward the above pilot errors?

The term "pilot error" always strikes a responsive chord in anyone who has ever pushed up a throttle. In the course of trying to learn more about pilots' attitudes toward errors, a group of 52 fleet P-3 pilots was asked, among other things, to rank in order 13 well known pilot errors on certain attributes. Each error was typewritten on a 3- by 5-inch card and given to the pilots to rank in order from "most" to "least" in terms of their perception of how seriously commission of the error would damage one's career.

They were also asked to rank the same errors as to how much they perceived the commission of the error being fun. A word should be said here about the attribute of fun. Many pilots, including the author, found it difficult to think about error-making as fun, but with some explanation, the pilots were able to rank in order the errors on this attribute. The explanations involved sports-related studies where it was found that certain behaviors had a positive effect for players even though they were mistakes or examples of poor play. In playing table pool, for instance, making a blast shot is an example of poor play but, for many players, fun to perform.

The average ordering of how the 52 pilots perceived the errors would affect their career is shown in the left-hand column of Table 1:

Career Impact Ranking	Pilot Errors	Fun Ranking
1	Taxi off the taxiway at night	12
2	Make a wheels-up pass	11
3	Abort takeoff beyond refusal; smoke removal door pops open	9
4	Call for wrong engine to be feathered	10
5	Crewman injured during heavy weather flying	13
6	Take off with pitot covers left on	7
7	Declare a low-fuel state due to headwinds	8
8	Unable to raise gear due to gear pins being left in	2
9	Induce an autofeather by rapid power lever movement	4
10	Go IFR on a VFR clearance	3
11	Salvage a landing from a poor approach	1
12	Exceed design airspeed for flap setting	5
13	Failure to note VOR OFF flag	6

Table 1

The thirteen errors are listed in order of adverse impact, from most adverse (taxi off taxiway) to least adverse (failure to note VOR OFF flag). This listing was used because it is the author's contention that it represents the pilots' perception of how "the system" (the Navy as an organization) views these errors. Stated in another way, to taxi off the taxiway at night or make a wheels-up pass are not as likely to be tolerated by the "higher ups" (or peers) as would "exceed design airspeed for flap setting" and "failure to note VOR OFF flag." The listing of errors in Table 1, then, approximates the real world acceptance of these errors by the aviation community; at least it reflects the pilots' perception of that acceptance of error. So what does this all mean?

Now look to the right-hand column in Table 1. This column shows where each error ranked on the attribute of "fun." As one can easily see, the errors ranked in roughly an inverse order as compared to the "career impact" ranking. This poses some interesting questions. For example, compare the error perceived to be the number one career-wrecker, **"Taxi off the taxiway at night"** with the 11th-ranked career wrecker, **"Salvage a landing from a poor approach . . . "** Then note where both errors rank in the "fun" listing. This comparison could be telling us that if a pilot runs his aircraft off the taxiway at night, he feels that it will seriously affect his career and won't be much fun. On the other hand, to continue a botched-up approach to a landing when it would have been safer to execute a waveoff will not, in the pilot's perception, seriously affect his career. And get this: it is fun!

Now carry this exercise one step further. Common sense tells us that taxiing errors are not usually the types of errors that lead to extensive damage to the aircraft or loss of life. However, available evidence indicates clearly that the approach and landing phase is among the most critical portions of flight. Approach and landing accidents are much more likely to cause fatalities and aircraft damage than a taxi-phase accident. The same argument can be applied to the 10th- and 12th-ranked errors on the "career impact" scale: **"Go IFR on a VFR clearance"** and **"Exceed design airspeed for flap setting."** These are both errors that are perceived as not seriously affecting one's career but are, in a way, fun. Think of the risks involved in going IFR on a VFR clearance. A midair or a collision with a mountain can ruin your whole day. Also, think of how fast the aircraft would roll if part of the flap fell away when the design airspeed was exceeded. Both errors have a *potential* to result in much greater damage than would be associated with taxiing the aircraft off the asphalt. Again, so what?

We should either take steps to change pilots' perceptions of "the system" or change "the system." We should make it more career damaging and less "fun" to commit the errors that are likely to lead to loss of life and heavy aircraft damage. Of course, the goal is not to make the pilot less conscious of the taxiing error, but instead to make him more aware of the real implications of the "salvage-a-landing" type error.

One answer might be the use of flight recorders that would allow postflight analysis of pilots' actions leading to the discovery of "salvage-a-landing" type errors. The CO or other supervisors could bring these errors to the attention of the pilot and, eventually, attitudes toward these errors would change, bringing those attitudes more in line with the real potential, in the broadest sense, of each error.

Think back. Have you ever made or watched a landing that should have been a waveoff? Would you or would the pilot have tried to salvage the landing if the CO had been aboard or observing? The knowledge that the flight recorder will document an error in judgment might be the impetus for a go-around that saves the lives of the crew and a valuable aircraft.

As stated in the beginning, the purpose of this article is to stimulate interest and provoke thought about pilots' attitudes toward errors. I hope that any mental exercise you have put forth in reading this article will sharpen your perception of pilot error and possibly increase the "margin of safety" you work so hard to maintain.

This article is an excerpt from a larger, more extensive study of P-3 pilots' attitudes toward errors. The original study is "Judgment, Oversight, and Skill: A Cultural Analysis of P-3 Pilot Error" by John M. Roberts, Thomas V. Golder, and Garry E. Chick. The study was conducted in 1977/1978 by the military author under the auspices of the Center for Advanced Research at the U. S. Naval War College, and in collaboration with Professor John M. Roberts, holder of the Andrew Mellon Chair for Anthropology at the University of Pittsburgh. The article is presented here to stimulate interest and provoke thought on pilot error. It should be pointed out that, although P-3 pilots were the subject of the study, the principle could be applied to any naval aviator, Navy aircraft, ship or other machine operated by a human being.

The Case for Silent

By LT Colin W. Sargent
HC-6

IMAGINE a perfect day for VERTREP: a carrier with six ships in formation, a cool Mediterranean-blue atmosphere, a sea like glass, not a cloud in the sky, and two H-46s flying. But **wait a minute**! A dark, garbled nimbus of unintelligible syllables crackles over the radios. UHF transmissions are storming! The *Sea Knights* shoot an approach back to their flight deck, unable to continue VERTREP beneath a heavily *broadcast sky*.

In less time than it takes to tell, the UHF "weather" has gone below minimums. What is happening here? As the control towers of each ship begin their inevitable queries, the blue sky darkens even further. With the electronic ceiling still descending, static hisses through the airwaves loud enough to excruciate eardrums in Michigan. An example of a UHF message generated by a ship's tower follows:

"Blackbird 07, this is November Six Two Alpha, request you divert to Beach Party Avalon when complete with tasking Charlie; also, say your state, type aircraft, and the stock number of the oranges you dropped on our deck two Mikes ago, over."

Meanwhile, the pilots of Blackbird 07 are airborne again, wishing they could turn off their UHF mixer switches because they're hoisting an admiral and two crates of grapefruit from the deck of November Kilo Six Uniform. In addition, the HAC and H2P are watching advisory hand signals from the ship's LSE, keeping track of the ship's relative motion by flying formation on a single bolt on the superstructure, and listening to a steady flow of ICS commands from their H-46 aircrewman:

"Easy down five – slide right five – steady – tension's coming on the cable – he's on his way up – steady – he's in the door – he's in the aircraft – the cable's going down again for the next pax."

All this at once! It's no secret that pilots have to process tremendous amounts of visual, tactile (the old "seat of the pants" routine), and aural information, especially during a touchy VERTREP hit. Still, turning off the UHF mixer switch is not the solution to a communications overload. Believe it or not, any H-46 pilot, when he's down to Bingo coffee and backed up against the wall in his wardroom, will reluctantly admit that important information is often relayed via ultrahigh frequency, even when the parties involved haven't had time to "brief on Guard." As a parting shot, though, he'll insist that "a pair of *Sea Knights* can move as many as 150 tons an hour with the UHF mixer on, and up to 180 tons an hour with the switch off."

VERTREP

Silent VERTREP is more than just a drawing board ideal. A "zip lip" operation can be extremely successful when all ships' operations departments have been fully briefed, but it can be a caustic nightmare when no one knows there's a silent evolution hiding out there somewhere and the pilots repeatedly have to inform the towers of that very fact on UHF.

The problems really begin when the two VERTREP helos become an airborne center of communications, instead of letting the helicopter control tower of the ship in charge of the exercise take command. The following steps are necessary for at least a *nearly* silent VERTREP plan to really work:

- All ships must be briefed on silent VERTREP procedures in advance.
- All impromptu UHF requests during an exercise should be made to the bridge of the MLSF (Mobile Logistic Supply Force) ship controlling the VERTREP aircraft, on a frequency other than Helo Common.
- Visual signals should be used to the fullest extent possible. A green light and an LSE's arms are worth a thousand words.
- The aircraft and helo control tower should be equipped, as many are, with FM radio sets for "emergency" tower-to-pilot communication.

It's that simple! Of course, complications will undoubtedly arise, but if silent VERTREP continues to be considered, discussed and attempted, techniques will be refined, and we'll approach minimum communications – and safety – as a limit.

Overanxious ship tower operators represent another area of concern. During a recent night VERTREP to an LPD, an H-46 was sliding over the deck for a pickup when the pilots heard the following transmission from the high-pitched voice of a tower operator:

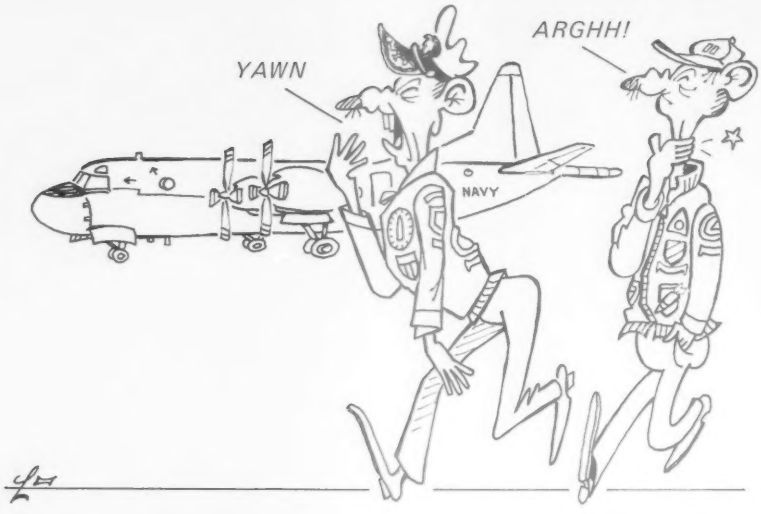
"Bluejay 14, Bluejay 14, your forward transmission's on fire – lots of smoke – put her down – land this deck immediately!"

Simultaneously, the cockpit went IMC with smoke and fumes. Unable to see, and hearing only a continued flux of indistinguishable emergency information from the tower, the H2P at the controls steadied the aircraft and set it straight down, where he knew a ship deck still existed. The landing was OK, and everyone was safe, but when the smoke cleared, the helo was sitting directly atop the only VERTREP load on the flight deck, resulting in a bent ADF antenna. Also, it turned out to be the cabin heater throwing the sparks and smoke, not the transmission, as the tower operator had maintained. Still later, it was determined that the HAC had been trying to tell the H2P to slide further left in order to miss the load, but the copilot couldn't hear him above the deafening crash of UHF communications.

Considering the IMC cockpit and resultant confusion, the H2P did well to put the aircraft straight down. After all, extended night IFR flight 5 feet above a moving ship deck is not especially recommended. In any case, the important thing to learn from this incident is that a nervous and presumably inexperienced tower operator can make a routine situation quite a bit more dangerous. Radio discipline can and does make a difference. Therefore, it's no brash assumption to say that the closer one can get to a silent VERTREP situation, the safer and more organized the flying will be.

In this world of silver-tongued elocution and golden oration, our current level of VERTREP silence is languishing several elements below lead on the Periodic Table of Elements. But what can be done? Just thinking in terms of silent VERTREP is a step in the right direction. Try it out. Whisper it to your friends. Silent VERTREP, or at least something approaching silent VERTREP, represents the safest and most productive future for the helicopter combat support community. ◄

Anymouse



VP Crew Rest

IT all started innocently enough. As with most deployed patrol squadrons, the NATOPS program was regarded very highly – except for crew rest. It is amazing how one small paragraph can be interpreted in so many ways. Of course, situations arise where, no matter how loosely crew rest policy is interpreted, it will not quite stretch far enough. Then, the oft-coined term "operational necessity" dictates. There may be some validity to this with the current pilot shortage reaching epidemic proportions. Such was this case, with the squadron being short about six pilots. Unfortunately, "operational necessity" opens the door for the overzealous ops boss, or almost anyone else in the chain of command, to override most rules. Deployment pressures being what they are, this is usually looked upon as a way of life.

It was halfway through the deployment that the following incident occurred. The squadron was in a "max flap" situation and very short of pilots. Operations had been progressing very well until one of the plane commanders suffered a sinus block. The only plane commander left was the most senior pilot in the squadron. Not only was he the senior pilot, but also the most experienced. He was considered the *best stick* by his peers and subordinates. He had one of the most responsible jobs in the squadron.

After a full day's work, he showed up to lead this exceptional crew. At his side were two senior 3Ps, one newly qualified engineer, and a second mech. In an effort to impress their new plane commander, the crew performed their preflight duties with their usual professionalism, and all systems were go. So, off they went on another operational mission.

The transit took about 2 hours and weather was good except for a cloud base at 3,000 feet. The crew descended on station to 300 feet where it was pitch black, except for the running lights of the ships and the strobes of the helos. After 6 hours on station, the mission was completed and considered a success. The crew returned to base for their familiar 15 hours of crew rest.

The plane commander, being made of true Navy grit, once again put in a full day's work during the rest period. Also during this crew rest period, one of the other pilots was experiencing sinus trouble and was losing his voice. Off he went to the friendly flight surgeon for a little medication. Unfortunately, the flight surgeon grounded this intrepid pilot. This did not daunt him, however. He realized that being down would jeopardize the night's patrol, since the squadron was out of pilots. So, limbering up his glib tongue and exuding his most persuasive manner, he convinced the flight surgeon an hour later that he had made a miraculous recovery and was fit to fly. The flight surgeon bought it!

Once again, the crew saddled up for a routine all-night patrol, or so they thought. Descending on station, the crew felt they were experiencing *deja vu*. The same ships were present, the same helos, the same weather, and the same target. The tube dwellers were more than ready, having benefited by the full crew rest period. The flight station was equally ready, with the exception of a PPC who had no sleep and a copilot with a sinus problem and severe sore throat. Things were proceeding well, contact was gained, and the aircraft proceeded to prosecute the target.

At this time, the plane commander was cleared to 300 feet, which happened to be the same altitude as that of a helo. When queried about this by

The purpose of Anymouse (anonymous) Reports is to help prevent or overcome dangerous situations. They are submitted by Naval and Marine Corps aviation personnel who have had hazardous or unsafe aviation experiences. These reports need not be signed. Self-mailing forms for writing Anymouse Reports are available in readyrooms and line shacks. All reports are considered for appropriate action.

the copilot, he said he felt it would be no problem to maintain visual separation. Upon leveling off, the PPC immediately went to 30 degrees angle-of-bank for a 180-degree turn to try and maintain contact. He did not engage the autopilot and failed to add sufficient power. The engineer had already slid back in his seat, and the copilot was busy reading the descent checklist and talking to the controlling ship after seeing that the aircraft had leveled off.

After a moment, the copilot looked at his instruments and noticed the aircraft at 30 degrees angle-of-bank, in excess of a 1,000 fpm rate of descent, and passing 150 feet. The PPC was looking out his side windshield, oblivious to it all. Upon seeing this, the copilot called for power to break the descent. The engineer, not being fully aware of the situation, slowly started adding power. Seeing the situation deteriorating rapidly, the copilot rammed the three power levers forward (No. 1 engine was loitered). At the same time, he saw the radar altimeter passing 50 feet with the aircraft still descending.

By this time, the plane commander realized that something was wrong and, together with the copilot, pulled back on the yoke while leveling the wings. Since the pullout was so abrupt, the airspeed fell below 150 knots. (Loiter speed was about 190 knots at the time.) Thus, they had to descend to 150 feet to pick up speed. By this time, the flight station realized that they had lost sight of the helo. Fortunately, the helo had sensed trouble and had cleared the area.

With 30 degrees angle-of-bank and less than 50 feet altitude, it is quite obvious that the wingtip was not far above water. Due to the PPC's position in the squadron, this event was never again mentioned other than when he privately commended the copilot on a "good call." Whether or not this particular incident occurred due to lack of crew rest, sickness, or vertigo is not known. The point is that these things are definitely contributing factors, and most of them can be avoided.

How many times have individuals made serious mistakes due to lack of rest? How many times have each of us flown when not feeling up to par but feeling that it was alright because we had a good copilot to cover for us? Lastly, *how many times have rules, especially crew rest rules, been waived due to operational necessity?* If everyone used common sense, NATOPS wouldn't be necessary. Unfortunately, since everyone is the worst judge of himself and common sense doesn't always prevail, *NATOPS must be adhered to.*

A Hurried Briefing

I WAS told that we were having a flyoff because of an approaching typhoon. Being the duty plane captain, I started my turnaround and preflight. The aircraft was down due to a malfunctioning brake, but I was told that it was okay for flight – that it was going to be made an UP gripe. I completed my preflight around 1300.

At 1300 the pilot arrived and asked how soon the plane would be ready for flight. I informed him it was ready, signed off, and UP. He told me that takeoff would be at 1500.

The SDO then informed me that we would have another passenger, a nonflyer. I told him that the passenger would need flight gear and a ditching/bailout brief. The SDO said the passenger would be there at 1430. At 1440 the passenger still had not arrived.

The pilot signed the "A" sheet, and we went to the aircraft to do the walkaround. About halfway through the walkaround, the passenger arrived at maintenance control. The time was now 1458, 2 minutes before launch. I was told to prepare the passenger for takeoff and get him back to the plane ASAP. We suited him and returned to the aircraft. Part way into my ditching and bailout brief, the No. 1 engine was started. I had to disembark from the aircraft to pick up my own flight gear. I then completed the remainder of my functional walkaround. After giving the pilot my plane captain's report, I went back to position No. 4 and finished the ditching and bailout brief.

While asking the passenger if he had any questions, I noticed that the plane did not seem to be taxiing very smoothly. I looked out the window and thought I saw smoke. After manning the upper hatch and looking aft, I confirmed that the aircraft was indeed smoking. Before I could inform the pilot, the brake burst into flame.

I informed the pilot and immediately went to get the fire extinguisher, but it wasn't there. I exited the plane via the nonburning brake side, opened the lower hatch, helped undo the passenger's Koch fittings, and helped him from the aircraft. After I pinned the aircraft, the pilot shut it down. The crash crew arrived and put out the fire.

When the passenger's flight gear was removed, it was discovered that his torso harness chest strap was not secured and had not been secured during the whole evolution.

The results of this hurry-up briefing were: an incomplete ditching/bailout brief, a brake fire, and a passenger unsafe for bailout.

If the passenger had arrived on time, the PRs and myself would have had enough time to properly dress him and make sure something as obvious as securing the torso strap would not have been overlooked. Additionally, he would have had a better brief on the equipment in his survival vest in case he needed it.

Had I been manning the upper hatch instead of being in the back briefing a late arrival, I would have noticed the smoke sooner, long before it reached the ignition point.

I feel that passengers not fitted and briefed on their flight gear and not having received the ditching/bailout brief 30 minutes before takeoff should be canceled from the flight.

Plane captainmouse

Pointers from Pinky

By LT John "Pinky" Price
VP-60

I HAD just checked into my new squadron and was participating in my first safety standdown. Our safety officer had just asked the question, "What do you think will cause the next P-3 accident?" Certainly, it was an uncomfortable question, and everyone in the room seemed a little nervous as they wrote down their thoughts on the subject. Without much hesitation, I wrote down, "Fly into an island or mountain." Why? Well, I had an impressive 50 hours in the *Orion* and had already seen two close calls. The overwhelming response from the squadron's officers was that a midair collision would down the next P-3. Very few pilots seemed too concerned about the threat the thousands of islands and coastal countries pose to our lives.

During my ensuing 3-year tour, I experienced and heard of many more close encounters with just about everything that sticks out of the ocean. I include oil rigs and icebergs, in addition to islands. They all hurt when you're traveling 4 miles a minute and fly into one.

Here are just a few ways to finish your mission at the club instead of on the back page of the *WEEKLY SUMMARY*:

- Back up the navigator! Do his fly-to points agree with the brief sheet or flight plan? Do you have an extra chart in the flight station to ensure that your descent is over the North Atlantic and not the Jan Mayen Islands?
- Use the radar and all available navigational aids for **all** IFR descents. In other words, use **everything** in your airplane that will tell you where you are and what's in front of the aircraft.
- Use the radar wisely! If you're in marginal weather conditions, you don't want to make a straight-in approach to a target. Instead of a ship, you may find yourself looking at an iceberg or island. This has happened more than once! Always use an offset radar run-in technique.
- Whether you're flying into Adak, Andoya, or Antigua, it would be nice to know the lay of the land. Every year, without fail, we lose aircraft to the terrain surrounding runways. If the airport has an instrument approach, why not use it? Many pilots have awakened the morning after their "visual" approach only to find that their base leg was through a mountain pass. Some never woke up!

The word "uncomfortable" is a key word when flying and especially important when descending over the ocean. If you feel ill at ease just before you enter that cloud layer at 2,000 feet, ask yourself the following question: "Have I done everything possible to prevent a memorial service?"

A brief encounter with OPNAVINST 3750.6M

By LCDR Robert C. Hazzard
Medical Department
MCAS Yuma

WOULDN'T you know it, as soon as we get used to following the instructions in OPNAV 3750.6L, the Navy goes and changes it. Thank goodness our initiation to 3750.6M was accompanied by a super squadron safety officer. We did our best to convince the Safety Center that the following mishap did not qualify for mishap investigation status and to consider it as such was a waste of time and money. However, the Safety Center pointed out the fine print in 3750.6M, and we resigned ourselves to the inevitable and jumped right in.

It all started one Saturday morning as an experienced pilot was preflighting his A-4M for a postmaintenance functional checkflight. After the ground inspection, he mounted the boarding ladder on the port side, went down the wing walkway, over the fuselage, down the starboard wing walkway, and jumped off the trailing edge of the wing. Unfortunately, as he exited the spoiler, his foot slipped and he experienced an uncontrolled descent of approximately 4 feet, landing on the cement on "all fours" and striking his left knee pretty hard in the process. He didn't break anything but was in a down status for 4 days as a result of the injury. As .6M states, more than 24 hours in a down status requires an investigation and report. It was our duty to comply.

It was too bad we did not immediately recognize this mishap as reportable in that certain aspects of the investigation were either left out or deferred until a later time, e.g., the pilot was brought to the dispensary and it was decided blood analysis for drugs, alcohol, toxic substances, etc. was not justified for a "bump on the knee." In retrospect, the pilot probably would have felt much better about the mishap if we had been able to give him a "clean bill of health," i.e., erased any suspicion of drug or alcohol use. Another aspect was examination of the wing surface itself to see if there was any substance that could have caused his foot to slip. The pilot stated he found some hydraulic fluid on the wing but that it did not contribute to his fall. By the time the wing was examined, no fluid was found.

Things really got interesting when we started asking questions, e.g., what was the pilot doing walking on a control surface clearly marked "No Step"? The first answer was, "We've always done it that way!" In a limited sense, this was probably true, but it was unsatisfactory for our purposes. Our next step was to examine the wings of all A-4M and TA-4 aircraft on the flight line, in the hangar, and thereabouts. Some spoilers had "No Step" painted on them and others didn't. None of the aircraft complied with the painting regulations of the Naval Air Rework Facility. Checking with the squadron technical representative, we found that the company prohibits walking on the spoilers due to a "zero margin of safety" and "zero hole damage" and that NATOPS specifically outlines the proper path for preflight inspection. It excludes walking on control surfaces. Now we had a real tiger by the tail. Was it possible everyone in the squadron, aircrew as well as ground crew, was violating regulations? Possible but not probable, so we decided to continue digging until we came up with some satisfactory answers. Here is what we found:

- There is no local authority for painting "No Step" on spoilers (touchup only). Only the Naval Air Rework Facility has that authority, thus the condition of "noncompliance." (*Actually, squadrons do have the authority to apply prescribed paint schemes if NARFs omit any. – Ed.*)
- While the Corrosion Control and Structural Repair manuals justify the "No Step" on the basis of the metal being brittle and easily cracked, our maintenance records show only one spoiler having to be replaced in the past 12 months, and this was not from being trod upon.
- NAVAIR 01-40-AVM-1, NATOPS, while not allowing over-wing or over-fuselage transit, specifically requires "wing tank filler cap, fuselage tank filler cap, cover and access door must be secure," which can only be practically examined by over-wing and over-fuselage transit. Examination of the fuselage tank cap, etc. makes sense, as any problem in this area can cause streaming of fuel into the tail section, followed by explosion and loss of the aircraft (this has happened). This is why the NATOPS review conference of November 1980 approved a change allowing "over-wing preflight inspection."

There are several things we can learn from this incident:

- There probably are more ramifications to minor incidents than are immediately obvious. If these are investigated thoroughly, everyone profits.
- If operational commitments and NATOPS requirements are in conflict, the mechanism for resolving the differences is readily available and must be used.
- If there is any question concerning the reportability of a mishap, it should be treated as reportable until a determination has been made.

Contrary to our original opinion ("this investigation was a waste of time and money"), our final conclusions were markedly different. It is never a waste to do our jobs properly, no matter how insignificant they seem at the time. Those of us in operational billets often feel our view of the world is different from that of the Safety Center. It occurred to us that part of our job is to provide the Safety Center with enough pertinent, in-depth data so that these differences can be minimized or eliminated altogether. After all, we're all in this together!

As a result of the investigation and report of this mishap, the wing walkway on A-4 aircraft will be extended to include a nonskid area on the spoilers. – Ed.

BOTTLES and THROTTLES

KEVIN was a bachelor lieutenant and a pilot, not necessarily in that order. He was just finishing a tour in VF and on his way to Kingsville to become an instructor. He hoped when he finished that tour he would have the hours and experience to be considered for a department-head tour. Of his career potential, there was no doubt; his performance was exceptional.

At a squadron beer bust back at NAS Conus, after a long deployment to Gonzo Station and points east, Kevin *blacked out*. In this context, a *blackout* is not the result of too many G but of too many beers. It is a state of consciousness without inhibitions, judgment, or memory but with all motor functions

more or less intact. Because the victim walks, talks, fights, sings, and even drives, most people are unaware he is in a blackout. Many people don't even believe in blackouts, although they are far more common among heavy drinkers than is generally suspected.

Kevin believes in them now. He came out of his blackout in a cell in the county jail, unaware of how he got there. He found himself charged with DWI, leaving the scene of an accident, and resisting arrest.

Through the good work of an enlightened CO and a concerned judge, Kevin arrived at one of the Navy's Alcohol Rehabilitation Centers. His treatment therapy revealed other blackouts, time missed from work, getting drunk when he hadn't intended to, drinking alone, drinking and driving (and drinking *while* driving), and a perceived inability to relate to people – especially female – without alcohol. In other words, Kevin was an alcoholic.

Oh, he denied he was an alcoholic; one of the symptoms of alcoholism is *denial.* He characterized himself as "a moderate drinker with bad luck." He didn't drink any more than most of his friends, and he had never been in trouble before. He had no liver damage and his vital signs were within normal limits.

Alcoholism, or alcohol addiction, is a process, not a state. It begins when one starts to drink primarily for effect. It continues when drinking contributes to negative consequences or life problems, and one continues to drink. It hooks a person when the problems become so painful that he (or she) drinks to escape them – and inherits more problems. It deepens when he loses self-esteem and drinks to restore it. It accelerates when one loses control of the amount he drinks or drinks on inappropriate occasions. It ends in death or institutionalization... or treatment and recovery.

Kevin was fortunate. There was an aviator on the rehabilitation center's staff who knew about the tailhook life, happy hours, and beer busts. That aviator was also a recovered alcoholic who knew about blackouts and denial and peer pressure and the macho connotations of heavy drinking.

In a subsequent triad (three counselors and one patient – one of the most intensive forms of therapy available anywhere) that aviator on the staff asked Kevin, "What's going to happen when you're a little hung over and your G-suit malfunctions during a dogfight? What's going to happen when there's an emergency sortie and you're not quite sober? What's going to happen when you lose that little edge that makes you the duty hotshot? What's going to happen when you hit someone head-on on your way home from happy hour? What will happen when your blood pressure rises or your liver malfunctions or your eyesight begins to be affected?"

Kevin underwent 6 weeks of therapy at the Navy Alcohol Rehabilitation Center. He left admitting, albeit reluctantly, that he had problems handling alcohol.

A lifetime of abstinence is not an "official" goal of the center. But the staff all know that anyone who has experienced drinking problems serious enough to get to an Alcohol Rehabilitation Center cannot *safely* drink again, and abstinence is encouraged. In this regard, Kevin, like all Navy Alcohol Rehabilitation Center patients, was exposed to *total immersion* in the philosophy and fellowship of Alcoholics Anonymous (AA). This worldwide organization provides a support system for the recovering alcoholic with a long-term commitment to sobriety. Whether the individual continues in AA after leaving the center is, of course, a personal decision.

Kevin's treatment was documented *only* in his medical records. His CO alone knew officially where he had been. His fitness report was not affected. *(Refusal of treatment or regression following treatment can be reflected in a fitness report. – Ed.)* He has since reported for instructor duty, and his career plans are currently unaffected. Whether he is drinking or not is unknown. If he is, he isn't enjoying it. He knows too much!

About 85 percent of all adult drinkers are true social drinkers with few if any problems associated with alcohol use. The remaining 10-15 percent (whether aviators, doctors, longshoremen, teachers, ministers, housewives, businessmen, or whatever) develop a dependence – psychological, physical, or both – on the chemical and encounter problems of excessiveness, inappropriate use, or inappropriate use-related behavior.

The U. S. Navy has a number of programs for these people. The Navy Alcohol Safety Action Program (NASAP) has provided effective education regarding the use of alcohol and other substances to some 60,000 Navy personnel in the past 6 years. Counseling and Assistance Centers (CAACs) offer screening, evaluation, and referral services for people with suspected drug and/or alcohol problems. The Navy Alcohol Rehabilitation Centers (Norfolk, San Diego, and Jacksonville) and the Alcohol Rehabilitation Services (all major Naval Regional Medical Centers) provide intensive residential treatment.

Kevin was one of the fortunate few. His problem came to the attention of a concerned, informed CO at a point where it could be effectively treated. Not many officers, and few aviators, are so fortunate. The coverup of "killing with kindness" is more common. Flying is perceived as a "work hard, play hard" career, and alcoholism too often as "the other man's disease."

Virtually every squadron has someone who is a potential problem drinker. Virtually every CO, XO, safety officer, and flight surgeon know who that someone is. They wouldn't think of covering up a sinus infection or a crack in a wing, but they are hesitant to identify a potential casualty of alcohol. ◄

By CDR L. M. Stevenson
Navy Alcohol Rehabilitation Center, Jacksonville, FL

Preflight for survival

By the staff of the Aviation Physiology Training Service
MCAS Beaufort, SC

IT is a fact of human nature that we are reluctant to consider unpleasant subjects. Few of us are convinced of our own mortality, nor do we generally go out of our way to contemplate pain or painful situations. But let's try to overcome that reluctance in the interest of avoiding pain.

Have you seriously considered what you are going to do if your aircraft becomes no more than a hunk of metal screaming towards a violent rendezvous with *terra* (or aqua) *firma*? "Well sure, they go over that in physiology training every couple of years. Besides, it's in NATOPS, isn't it?"

Have you taken a good look at your NATOPS lately? The standard procedures for emergency egress are there, along with a rundown on a few postegress problems which could arise. But have you ever heard of a standard emergency? NATOPS is excellent as far as it goes, but does it go far enough?

Let's pose a few additional questions: What gear is in your survival vest or that hunk of fiberglass strapped to your derriere or stored in your liferaft? Do you really know how to use that gear? Can you get to it in the dark or in the water? Can you get to it and use it if you're injured? Admittedly, these aren't the most pleasant questions for contemplation, unless you have a particularly morbid mind. (It's more interesting to contemplate that "10" at the beach or the chances for an RON at NAS Funtown, USA.) But, what *would* you do?

At the request of Col J. M. Mead, Commanding Officer of MAG-31 at MCAS Beaufort, the Aviation Physiology Training Service recently cooked up a bit of a surprise to find out if MAG aircrews are asking themselves these questions and to see if existing training programs are providing the answers.

First lieutenants J. D. Mann and D. A. Jones, attached to VMFA-115, were heading in from their aircraft after a flight when they were met by the smiling faces of the MAG-31 Safety Officer, Maj L. Dudley, and the Aeromedical Safety Officer/Physiologist, LTJG S. J. Feith. Needless to say, when you're met by the MAG ASO and the AMSO and they're both smiling, something's up.

Quite true! Our two intrepid aviators were up . . . literally. Still in their own flight gear, 1st Lts Mann and Jones soon found themselves suspended from a set of risers in the Physiology Training Building, going through their postparachute-deployment procedures in accordance with NATOPS and under conditions not covered by NATOPS. Day, night, over land, over water, with and without injuries – a whole gamut of situations was covered.

After the parachute hang, an inventory of each aviator's man-mounted equipment was conducted to ensure that required equipment was on hand and in working order. The two members of the APTS staff in charge of flight equipment maintenance and instruction, PR1 J. Forney and HM1 E. Darby, went over each item with the aviators to determine their knowledge of the location and use of the equipment.

Then the acid test was conducted. Our aviators found themselves survivors of a low-level, high-speed, over-water ejection. Completely outfitted in training equipment (including survival kits equipped as they are carried in the aircraft), the survivors were placed in an open-water area of the MCAS. They were accompanied by two safety swimmers, HM1 S. R. McBride and HM1 W. F. Hansen, both Red Cross WSIs and APTS staff water survival instructors.

The survivors spent 2 hours in the water, inflating and boarding their rafts, treating simulated injuries, and utilizing their signaling devices to ensure their location and rescue. Every step of the operation was under the observation of the safety swimmers and two on-shore observers, HMC H. Bowman and TD2 L. Goldbach. The exercise ended with the MCAS SAR Helo locating the survivors and coming overhead for the rescue.

This was more than an exercise in controlled sadism. Both aviators admitted benefiting from the experience. There were a few surprises insofar as equipment and signaling device use, but overall, they did a good job. Why? Training and an interest in their own survival, of course. But what about the problems they did have? That they had so few problems proved the value of hands-on training. That they had any problems at all emphasized the need to expand and improve dynamic, hands-on training with operational equipment. Additionally, the emergency egress section of NATOPS should be expanded to provide guidance in a wider spectrum of emergencies. This should be done in a clear, concise, readily understandable manner. (CDR Greear's articles published in *APPROACH*, showing illustrations of NATOPS procedures for the proposed NAVAIR 00-80T-101, have been met with great enthusiasm at MCAS Beaufort for that reason.)

You also can make sure that you are "preflighted for survival." Before you next "kick the tires and light the fires," ask yourself some questions:

- Is your man-mounted survival/signaling equipment up to date? (Do you wait for the parachute rigger to track you down when your gear is due for a check?)
- Is that gear complete? (Do you *know* what's supposed to be in there, or do you let the PR worry about that as well?)
- Does the equipment work? (Do you know how to check it without filling the readyroom with orange smoke, parting the XO's hair with a flare, or launching a major SAR effort over your hangar?)
- Do you know what gear is in your survival kit or raft? Do you know where that gear is and how to use it?
- Have you given much thought to what you're going to do after you get out of the aircraft? (And are you going to do it before or after filling out the survey chit on your flight suit?)
- Have you gone over your land/water survival procedures lately? (While you're at it, is your training current?)
- Have you developed a tendency to sleep your way through those annual reviews by the flight surgeon or aviation physiologist? Do you find excuses to be elsewhere?
- Do you actively participate in your squadron's training program on survival and survival equipment? (Does your squadron have a survival training program?)
- Are you *using* those sources of knowledge and expertise available to you? (Flight surgeons and aviation physiologists *can* do something other than the standard "song and dance" on physiology or the other canned topics usually requested. Also, most parachute riggers and AMEs will answer questions and let you go over the equipment, if you take the time to ask.)

The bottom line is that the time has come to start preflighting for survival as well as flying. Unfortunately, one can, and sometimes does, lead to the other. Statistically, naval aviation is not rating a *sierra hotel* in survival. We must reverse this trend, as the alternative is, literally, dead aviators. Before your next launch for some hole in the wild blue, take a moment, have a seat, and ask yourself one final question: "Am I as prepared to survive as I am to fly?" ◄

Editor's note: Pending publication of the NAVAIR 00-80T-101 Survival/Egress Manual, the following volumes comprising the NAVAIR 13-1-6 series Aviation Crew Systems Manual are a concise, local source of definitive technical information on aircrew personal protective and survival equipment:

NAVAIR 13-1-6.1 Inflatable Survival Equipment
NAVAIR 13-1-6.3 Seat Survival Kits
NAVAIR 13-1-6.5 Rescue and Survival Equipment
NAVAIR 13-1-6.7 Aircrew Personal Protective Equipment

LETTERS
to the editor

Re: Letters to the Editor, APR '81 *APPROACH*

VAQ

Queer that you should question our "Q"
However, quite frankly, others question it, too.
Quandaries concerning Q's oft pass the time,
Over a quince squash or quinine and lime.

"Quick, but not quiet" describes our plane well.
So does "Queen of the Jammers,"
But the question's not quelled.

Quick-witted quadrumvirate crews (you'll find none smarter),
Quash threat radars and give them no quarter.
The quarry's a grape – now electronically blind,
The strike group will quell their quiescent behinds.

Query no more the "Q" in our name.
The answer, like quarks, is small and not easy to tame.
"Q" is for *Qualified* – in war and in peace!
As we electronically protect our nation and fleet.

LCDR J. L. "Pirate" Hershberger
VAQ-133

P.S. – The "Q" also stands for "special mission."

Re: "Standdowns – Where to Go for Help"

NAS Miramar – I read the standdown article in the FEB '81 issue with interest and anticipation. I suggest for your next revision you include consulting your closest meteorologist for idea information, training aids, and guest speakers.

Under "Prepared Videotapes/Slides," you noted that the USAF has excellent videotapes on a wide variety of subjects. For your information, the USAF uses the "Caramate" projector as a medium for "sound on slide" presentations for aircrew training. For example, they produced an excellent presentation, which is available from your local Naval Oceanography Command Detachment/activity, entitled "Lightning Strikes to Aircraft," NWS-AG-J-085. I have presented this to 13 squadrons at NAS Miramar, and it has been quite well received. I wonder why the Navy doesn't use sound on slide or, better yet, color videotape as a medium for aircrew training?

B. F. DeWald
Officer in Charge
Naval Oceanography Command Detachment

• The Naval Safety Center has been producing sound/slide presentations for some time. These are called HAWKits and are mentioned in the subject article. Current pilot projects using videotape for training are underway at this time. Color videotape "spots" have been produced by the Naval Safety Center and distributed by NIRA for several years.

Single-Engine Procedure in Twins

Forth Worth, TX – Congratulations on your excellent article, "Single-Engine Procedure in Twin-Engine Aircraft," in the APR '81 issue of *APPROACH*.

Les Berven, the FAA engineering test pilot who provided the impetus for your article, was one of my test pilots when he developed his study, "Engine-Out Characteristics of Multi-Engine Aircraft," in 1976. At that time Les was assigned to the FAA certification programs in Wichita, Kansas that included Beechcraft, Cessna, and Gates Learjet, all manufacturers of twin-engine aircraft. When I was first exposed to his paper I was somewhat skeptical about some of his conclusions, but Les insisted on giving me a flight demonstration to prove his points. We used a new production Cessna 310R. The only nonstandard equipment on the aircraft was a 2-foot piece of string taped to the nose, a simple device that test pilots frequently use and call a yaw string.

Les compared two single-engine techniques. The first was wings level and ball precisely centered. (This resulted in the yaw string being displaced from center.)

The second technique called for precisely centering the yaw string with the longitudinal axis of the fuselage (minimum drag). This required approximately 3 to 5 degrees of bank into the operative engine, and we accepted the fact that the ball was out of the trace (about three-fourths of a ball width toward the low wing on this particular aircraft).

The first series of demonstrations was a standard V_{mc} demonstration, and he proved his point conclusively that V_{mc} speed was lowered considerably by using the wing low technique.

But the second series of demonstrations was even more convincing. This time we used a constant airspeed, the Airplane Flight Manual published V_YSE (best rate of climb speed, single-engine) with the critical engine feathered and maximum continuous power on the operating engine. The difference in climb performance as recorded by the vertical speed indicator, and altitude gained versus time was significantly improved using the wing-banked technique. I later took our rather ancient, FAA-owned Beech Model-80 *Queen Air* up, complete with yaw string taped to the nose, and was able to virtually duplicate the earlier findings.

As most of us know so well, single-engine performance in most light twin-engine aircraft is something less than spectacular, and that also applies to some heavy twins. Any technique that gives you an edge in performance might be invaluable in an engine-out emergency.

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APPROACH welcomes letters from its readers. All letters should be signed though names will be withheld on request.

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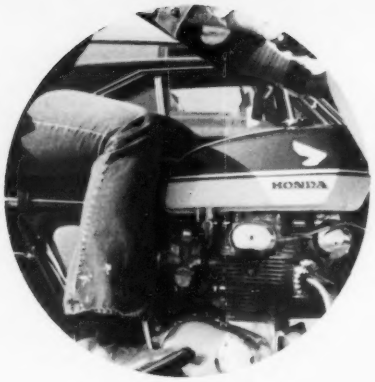

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